First report of Leaf spot of garden lupin (Lupinus polyphyllus Lindl.) caused by Pleiochaeta setosa Kirchn. in Italy.

First Report of Leaf Spot of Garden Lupin (*Lupinus polyphyllus* Lindl.) Caused by *Pleiochaeta setosa* Kirchn. in Italy. A. Garibaldi, D. Bertetti, A. Poli and M. L. Gullino, Centre of Competence for the Innovation in the Agro-Environmental Sector (AGROINNOVA) Via Leonardo da Vinci 44, 10095 Grugliasco, Italy.

Lupinus polyphyllus, common name garden lupin, is a perennial plant with a great number of hybrids that can vary dramatically in colour, used in parks and gardens and also grown as cut flowers. During summer 2011, extensive brown necroses were observed on old and young leaves of plants grown in a private garden near Biella (northern Italy). The disease affected about 50 of two-year-old plants. On older leaves, the first symptoms were usually brown circular to irregular lesions, 1-10 mm in diameter, showing in the inner part alternating pale and dark brown circles. Lesions usually interested the entire leaf and showed a yellow halo. On younger leaves, lesions were darker, violet, with a chlorotic halo. When lesions interested the entire leaf, it curled, without falling. Eventually lesions interested also leaf veins and stems and plants died. A fungus was consistently isolated from infected leaves on potato dextrose agar (PDA) at average daily temperature ranging from 21 to 25°C, under 16 h of light and 8 h of darkness. Mature colonies were dark olive-green and produced orange-ochre pigments in the medium. The mycelium had olivaceous, septate hyphae that produced abundant dark, intercalary chlamydospores. The conidia were cylindrical to elliptical, slightly curved, with a truncated base, 5-7 transverse septa and 3 hyaline appendages. The cells at the ends of conidia were sub-hyaline, whereas the intermediate cells were olive-brown. The conidia measured 76-94 × 14-9 (average 85 × 16) µm. Appendages were up to 84 µm long. On the basis of its morphological characteristics the pathogen was identified as *Pleiochaeta setosa*. DNA was extracted using Terra PCR Direct Polymerase Mix (Clonte, CH) and PCR carried out using ITS 1/ ITS 4 primer (4). A 570 base pair PCR product was sequenced and a BLASTn search (1) confirmed that the sequence corresponded to *Pleiochaeta setosa*. The nucleotide sequence has been assigned the GenBank Accession number JQ358708. Pathogenicity tests were performed by inoculating leaves of healthy 5-month-old lupin plants, by placing 8 mm mycelial disks of one isolate of the pathogen grown on PDA in light-dark for 15 days. Five plants were used and ten leaves/plant were inoculated. Five plants inoculated with PDA disks served as control. Plants were covered with plastic bags for 4 days after inoculation and maintained in a growth chamber at 20°C ± 1. Lesions developed on leaves 3 days after inoculation, whereas control plants remained healthy. *P. setosa* was consistently reisolated from these lesions. The pathogenicity test was carried out twice. The presence of *P. setosa* on *L. polyphyllus* has been

reported in Australia, USA (2) and Poland (3). This is, to our knowledge, the first report of *P. setosa* in Italy. The impact of this disease is at present limited.

References: (1) S.F. Altschul *et al*. Nucleic Acids Res., 25:3389, 1997. (2) A.M. French. California Plant Disease Host index. Calif. Dept. Food Agric. Sacramento, 394 pages, 1989. (3) W. Mulenko *et al*. A preliminary checklist of Mycromycetes in Poland Polish Academy of Sciences, 752 pages, 1982. (4) T. J. White *et al*. In: PCR Protocols: A Guide to Methods and Applications (M. A. Innis *et al*., eds.) Academic Press, San Diego, 1990.